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AGE-RELATED CHARACTERISTICS OF THE EPIDEMIOLOGY OF STRESS AND DYSLIPOPROTEINAEMIC RISK FACTORS IN A POPULATION OF PREGNANT WOMEN (RESULTS OF A THREE-YEAR MONITORING STUDY)

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Abstract:
Arterial hypertension (AH) in pregnant women occupies a special place among the pressing issues of modern medicine. It is an integral part of at least two extremely acute medical and social problems today: hypertension in general and the reproductive health of the nation. The main problem of hypertension in pregnant women: the lack of a unified terminology, the use of different classification and criteria for hypertension, tactics of patient management. We tried, on the basis of evidence-based medicine, to present the classification of hypertension in pregnant women and the principles of drug therapy, including emergency care in hypertensive crisis.
Until now, information on hypertensive and autonomic crises during pregnancy, obtained from epidemiological studies, has been virtually nonexistent. The emergence of such data will not only standardize and refine approaches to the early diagnosis and treatment of hypertensive and autonomic crises during pregnancy but also significantly improve obstetric and therapeutic outcomes.
Therefore, determining the incidence of these emergency conditions in the pregnant population, identifying the main epidemiological and maternal risk factors, and urgently preventing their obstetric and therapeutic complications based on the study of "innovative population-based developments" are current, global, regional, and national priorities for ongoing scientific research. Such scientific data is important not only for cardiologists, but also for neurologists, obstetricians, and other physicians working with this category of patients.

Keywords: Epidemiology, pregnancy, arterial hypertension, hypertensive and vegetative crises, pharmacotherapy.

INTRODUCTION

Hypertensive disorders in pregnant women are among the most common and significant cardiovascular diseases and syndromes. The significance of this problem is determined by the fact that pregnancy in women with hypertensive conditions is often accompanied by severe health problems and even death of the mother (up to 40% in some countries), high rates of childhood and perinatal morbidity and mortality, and a number of obstetric complications [2].

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Hypertensive conditions in pregnant women is a concept encompassing various clinical and pathogenetic variants of hypertensive disorders [5].

In some cases, women have a history of chronic kidney disease before pregnancy, which is the etiological factor for increased blood pressure; in others, it is essential hypertension; in others, in normotensive women before pregnancy, the increase in blood pressure is caused by the pregnancy itself, the so-called gestational forms - gestational hypertension and preeclampsia [1].

Moreover, in the structure of the causes of arterial hypertension during pregnancy, the greatest role is played by the latter, which, according to MABrown and MLBuddle [4], constitute the predominant part of all hypertensive disorders in pregnant women: gestational hypertension - 43%, preeclampsia - 27%, essential hypertension - 19%, preeclampsia against the background of previous hypertension - 7%, secondary (symptomatic) hypertension - 4% [6].

The purpose of the study based on the results of a clinical and epidemiological study, to substantiate innovative strategic directions for the prevention of hypertensive and vegetative crises in pregnant women in the Fergana Valley of Uzbekistan.

Materials and methods

Object of study. During the period 2019–2021, 1,500 pregnant women from women's outpatient clinics at maternity hospitals in Andijan were examined.

Subjects of research there was venous blood and its serum for biochemical analysis.

Research methods. General clinical, epidemiological, instrumental (EchoCG, ECG, ultrasound examination of internal organs), biochemical (cholesterol, triglycerides, sugar) and statistical methods were used.

Results and discussion

According to our results, the prevalence rate and 3-year dynamic change in stress factors (SF) are noted by the following features depending on the age of pregnant women (Table 1 and Fig. 1): at the age of up to 20 years – 19.12% (1st year of 3-year monitoring) and 13.24% (3rd year of the study), with a decrease in dynamics by 4.12% [RR = 0.22%; DU = 0.29 – 0.16; Xi2 = 62.45; P< 0.05]; in the age group 21 – 24 years – 26.40% and 16.55%, with a decrease by 9.9% [RR = 0.32%; DU = 0.39 – 0.24; Xi2 = 29.37; P< 0.05]; at 25–29 years old – 27.05% and 14.29% each, with a decrease of 13.8% [RR = 0.32%; DU = 0.39 – 0.24; Xi2 = 23.02]; at 30–34 years old – 11.11% and 10.32% each, with a decrease of 0.8% [RR = 0.12%; DU = 0.18 – 0.7; Xi2 = 15.56; P< 0.05]; at 35–39 years old – 10.34% and 8.62% each, with a decrease of 1.62% [RR = 0.11%; DU = 0.17 – 0.06; Xi2 = 7.62; P< 0.05]; at 40–44 years old – 10.00% and 10.00%, without dynamic changes, respectively [RR = 0.11%; DU = 0.16–0.06; Chi2 = 12.8; P< 0.05]; in the age group ≥ 45 years – 23.22% and 14.35%, with a decrease of 8.9% [RR = 0.27%; DU = 0.34–0.20; Chi2 = 81.55; P< 0.05].

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Table No. 1 Frequency and dynamics of stress factors in pregnant women depending on age (results of 3-year epidemiological monitoring)

№	Age groups	Years of monitoring						RR	CI		χ^2
		N	SF, 2019 year		P	SF, 2021 year					
			n	%		n	%		Max	Min	
1	up to 20 years	**68**	13	19,12	**<0,05**	9	13,24	0,22	0,29	0,16	62,45
2	21-24 years	**447**	118	26,40	**<0,05**	74	16,55	0,32	0,39	0,24	29,37
3	25-29 years	**329**	89	27,05	**<0,05**	47	14,29	0,32	0,39	0,24	23,02
4	30-34 years	**126**	14	11,11	**<0,05**	13	10,32	0,12	0,18	0,07	15,56
5	35-39 years	**58**	6	10,34	**<0,05**	5	8,62	0,11	0,17	0,06	7,62
6	40-44 years	**10**	1	10,00	**<0,05**	1	10,00	0,11	0,16	0,06	12,8
7	≥45 years	**1038**	**241**	**23,22**	**<0,05**	**149**	**14,35**	0,27	0,34	0,20	81,55

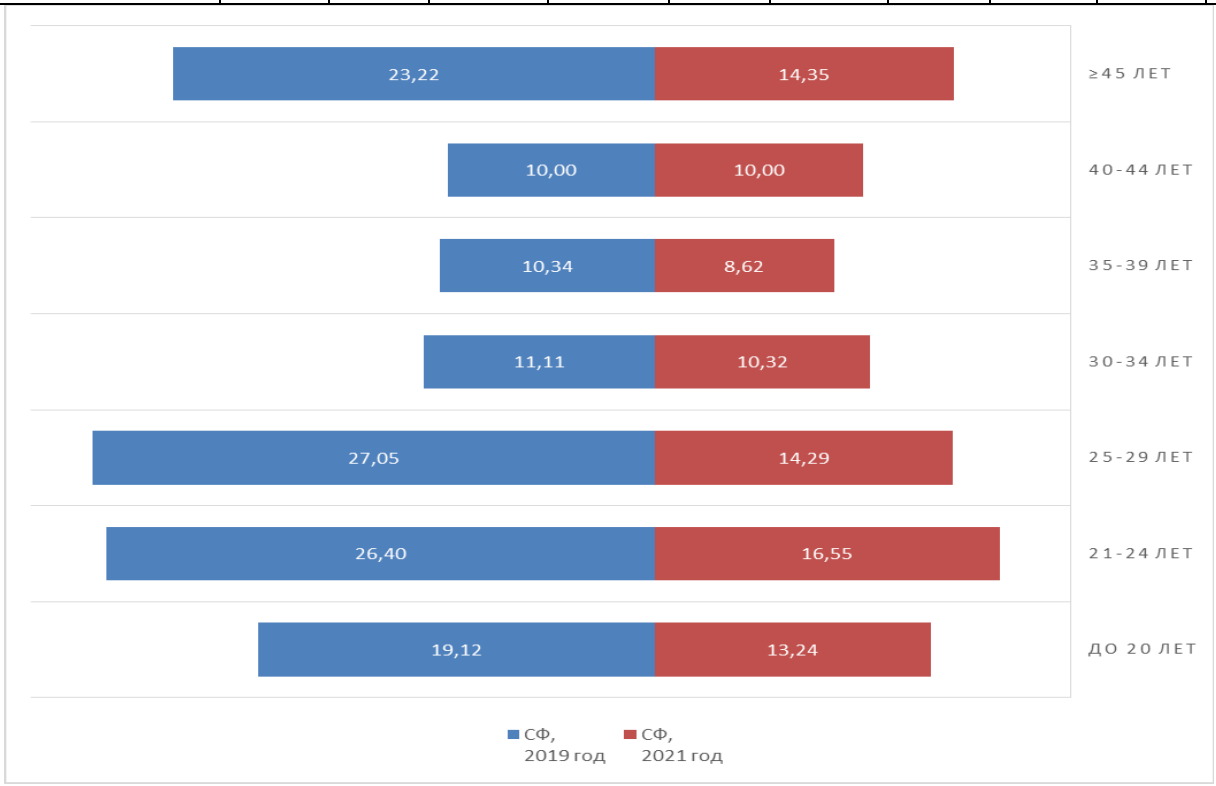

Fig. 1. The influence of age on stress risk factors in the population of pregnant women.

As can be seen from the presented analysis, a statistically significant decrease in the incidence of SF is observed across all age groups, and its detection rate increases almost twofold with age ($P < 0.05$). High prevalence occurs in the age groups 21–24 years, 25–29 years, and ≥ 45 years.

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Table 2 and Fig. 2 show the influence of age on dyslipoproteinemia in the population of pregnant women according to data from the 1st and 3rd years of three-year prospective monitoring.
The following prevalence rates of DLP are confirmed in different age groups of pregnant women, according to the first (2019) and second (2021) studies, respectively: at the age of up to 20 years – 30.88% and 13.24%, with a decrease in the detection rate of 16.6% [RR = 0.36%; DU = 0.43 – 0.28; Xi2 = 43.84; P< 0.05]; at the age of 21–24 years – 34.23% and 18.79%, with a decrease of 15.9% [RR = 0.42%; DU = 0.50 – 0.35; Xi2 = 20.21; P< 0.05]; at 25–29 years old – 48.02% and 18.54%, with a decrease of 30.5% [RR = 0.59%; DU = 0.67–0.51; Chi2 = 80.56; P < 0.05]; at 30–34 years old – 54.76% and 20.63%, with with a decrease of 34.13% [RR = 0.69%; DU = 0.77 – 0.62; Chi2 = 17.27; P< 0.05]; at 35–39 years old – 60.34% and 15.52% each, with a decrease of 44.82% [RR = 0.71%; DU = 0.79 – 0.64; Chi2 = 8.46; P< 0.05]; at 40–44 years old – 60.0% and 20.0% each, with a decrease of 20.0% [RR = 0.75%; DU = 0.82 – 0.68; Chi2 = 0.95; P< 0.05]; in the age group ≥ 45 years – 42.58% and 18.40%, respectively, with a decrease of 24.5% [RR = 0.52%; DU = 0.60 – 0.44; Chi2 = 335.67].

Table No. 2 Frequency and dynamics of dyslipoproteinemic factors in pregnant women depending on age (results of 3-year epidemiological monitoring)

	Age groups	Years of monitoring						RR	CI		χ^2
		N	DLP F, 2019 years		P	DLP F, 2021 years					
			n	%		n	%		Max	Min	
1	up to 20 years	**68**	21	30,88	**<0,05**	9	13,24	0,36	0,43	0,28	43,84
2	21-24 years	**447**	153	34,23	**<0,05**	84	18,79	0,42	0,50	0,35	20,21
3	25-29 years	**329**	158	48,02	**<0,05**	61	18,54	0,59	0,67	0,51	80,56
4	30-34 years	**126**	69	54,76	**<0,05**	26	20,63	0,69	0,77	0,62	17,27
5	35-39 years	**58**	35	60,34	**<0,05**	9	15,52	0,71	0,79	0,64	8,46
6	40-44 years	**10**	6	60,00	**>0,05**	2	20,00	0,75	0,82	0,68	0,95
7	≥45 years	**1038**	**442**	**42,58**	**<0,05**	**191**	**18,40**	0,52	0,60	0,44	335,67

Note: DLP F - dyslipoproteinemic factor

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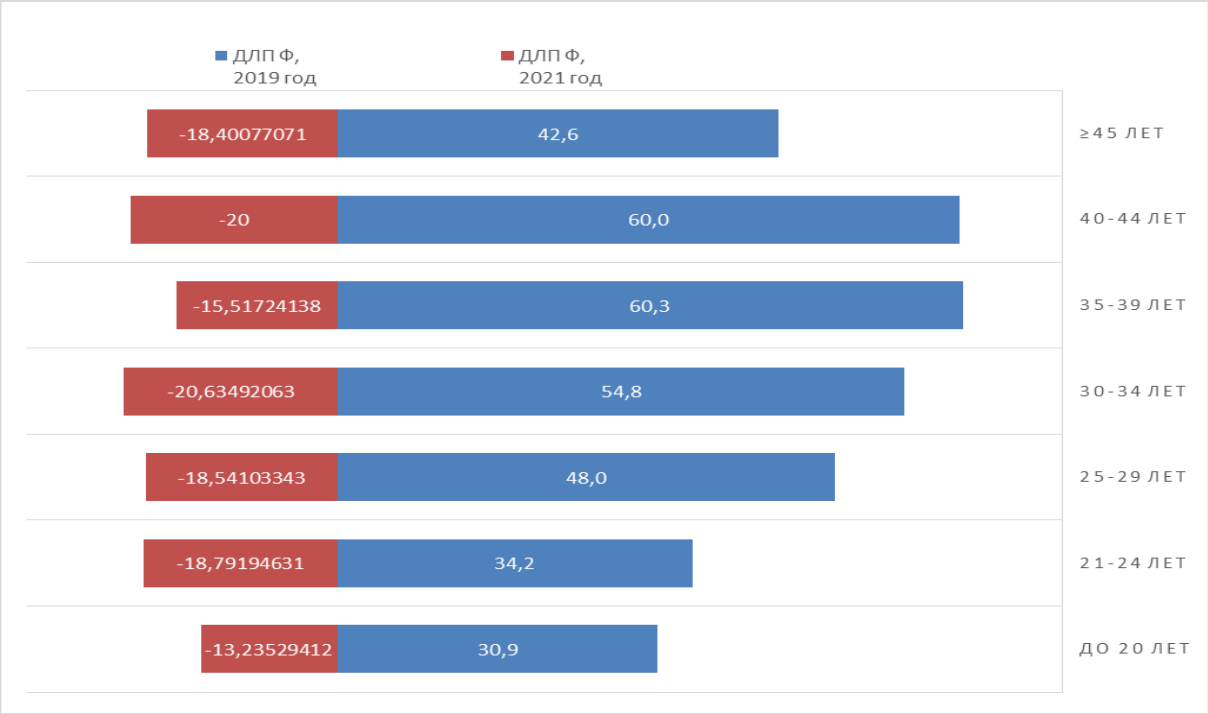

Fig. 2. Effects of age on DLP in the population of pregnant women.

Thus, it can be summarized that during the years of prospective monitoring/control, a positive result was a stable decrease in the incidence of DLP by more than 34.0%.

At the end of the prospective study, the prevalence of this risk factor was as follows: 13.24% at age 20, 18.79% at age 21-24, 48.02% and 18.54% at age 25-29, 20.63% at age 30-34, 15.52% at age 35-39, 20.00% at age 40-44, and 18.40% at age ≥ 45. In the PBZ, a 1.9-fold increase in the incidence of DLP was observed depending on age ($P < 0.05$).

Conclusion

In the population of pregnant women, a higher frequency of the following risk factors for hypertensive and vegetative crises with characteristic dynamic changes is observed: stress 40.4% (with an increase of 0.5%), dyslipoproteinemia 13.2% (with an increase of 2.1%), excess body weight 33.0% (with an increase of 5.1%), hyperglycemia 21.3% (with an increase of 8.8%), physical inactivity 32.8% (with an increase of 6.1%) and low consumption of vegetables and fruits 38.0% (with a decrease of 0.1%). With age, the frequency of detection of risk factors increases by 3-4 times. The risk of an increase in risk factors begins from the first trimester of pregnancy, reaching the highest values in the third trimester. The presence of risk factors and comorbid pathologies in the population of pregnant women increases the likelihood of developing crises to 78.0%.

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